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Chronic CAD/Stable Ischemic Heart Disease

OPTICAL COHERENCE TOMOGRAPHY FINDINGS IMMEDIATELY POST-STENT IMPLANTATION AND THEIR CLINICAL SIGNIFICANCE

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: New Tools for Invasive Evaluation of the Coronaries: What Else Can I See?
Abstract Category: 2. Chronic CAD/Stable Ischemic Heart Disease: Clinical
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Background: Optical Coherence Tomography (OCT) is gradually being adopted in catheterization laboratories. Post-stent complications such as malapposition, thrombus, and dissection are frequently observed with this high resolution imaging modality. However, the incidence and clinical significance of these findings are unknown.

Aim: The aim of this study is to identify complications immediately following stent implantation using OCT and to correlate these findings with clinical outcomes.

Methods: Patients who underwent OCT imaging at the end of new stent implantation and had at least 6 month follow up were recruited from the MGH OCT registry.

Results: A total of 352 stents in 282 patients were analyzed. Malapposition was identified in 32.1% of stents, in-stent thrombus in 44.3%, and protrusion in 87.2%. Stent edge dissection occurred in 11.7% of cases (62 cases: 32 at proximal edge and 30 at distal edge), and average size of the flap was 0.9 × 2.1 mm. Incidence of dissection was 27.3% in lipid plaque, 33.3% in calcific, and 6.5% in fibrous ($p<0.001$; lipid vs fibrous, calcific vs fibrous). Only 5.1% of dissection and 2.1 % of thrombus were detected on angiogram. At 6 month follow up, 4 patients (1.4%) had major adverse cardiac events; 1 ST elevation myocardial infarction (STEMI), 1 non-STEMI, and 2 unstable angina. In 3 cases, residual thrombus was observed inside the stent at the end of the index procedure, and in 1 case malapposition was visualized.

Conclusions: Post-stent complications were frequently indentified by OCT, especially when the underlying plaque type was lipid or calcific. Despite frequent complications, clinical events were relatively rare. Late major adverse cardiac events may be related to residual thrombus or malapposition (rather than to dissection) identified by OCT at the end of the procedure. Larger studies are warranted.